CLAIMS

We claim:

1. A targeting construct comprising:

(a) a first polynucleotide sequence homologous to a platelet-activating factor receptor gene;

(b) a second polynucleotide sequence homologous to the platelet-activating factor receptor gene; and

(c) a selectable marker.

2. The targeting construct of claim 1, wherein the targeting construct further comprises a screening marker.

3. A method of producing a targeting construct, the method comprising:

(a) providing a first polynucleotide sequence homologous to a platelet-activating factor receptor gene;

(b) providing a second polynucleotide sequence homologous to the platelet-activating factor receptor;

(c) providing a selectable marker; and

(d) inserting the first sequence, second sequence, and selectable marker into a vector, to produce the targeting construct.

4. A method of producing a targeting construct, the method comprising:

(a) providing a polynucleotide comprising a first sequence homologous to a first region of a platelet-activating factor receptor gene and a second sequence homologous to a platelet-activating factor receptor gene;

(b) inserting a positive selection marker in between the first and second sequences to form the targeting construct.

5. A cell comprising a disruption in a platelet-activating factor receptor gene.

6. The cell of claim 5, wherein the cell is a murine cell.

7. The cell of claim 6, wherein the murine cell is an embryonic stem cell.

8. A non-human transgenic animal comprising a disruption in a platelet-activating factor receptor gene.

9. A cell derived from the non-human transgenic animal of claim 8.

10. A method of producing a transgenic mouse comprising a disruption in a platelet-activating factor receptor gene, the method comprising:

(a) introducing the targeting construct of claim 1 into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse.

11. A method of identifying an agent that modulates the expression of a platelet-activating factor receptor, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a platelet-activating factor receptor gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the expression of platelet-activating factor receptor in the non-human transgenic animal is modulated.

12. A method of identifying an agent that modulates the function of a platelet-activating factor receptor, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a platelet-activating factor receptor gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the function of the disrupted platelet-activating factor receptor gene in the non-human transgenic animal is modulated.

13. A method of identifying an agent that modulates the expression of platelet-activating factor receptor, the method comprising:

(a) providing a cell comprising a disruption in a platelet-activating factor receptor gene;

(b) contacting the cell with an agent; and

(c) determining whether expression of the platelet-activating factor receptor is modulated.

14. A method of identifying an agent that modulates the function of a platelet-activating factor receptor gene, the method comprising:

(a) providing a cell comprising a disruption in a platelet-activating factor receptor gene;

(b) contacting the cell with an agent; and

(c) determining whether the function of the platelet-activating factor receptor gene is modulated.

15. The method of claim 13 or claim 14, wherein the cell is derived from the non-human transgenic animal of claim 8.

16. An agent identified by the method of claim 11, claim 12, claim 13, or claim 14.